COLEAD SUPPORT FOR BIOPESTICIDES REGISTRATION IN ACP COUNTRIES: *BEAUVERIA BASSIANA* CASE STUDY

Lilian Muriuki[1], Thomas Lopes[1], Pieterjan De Bauw[1], Alice Jacques[1], Morag Webb[1], Edouard Lehmann[1]

COLEAD (COMMITTEE LINKING ENTREPRENEURSHIP – AGRICULTURE – DEVELOPMENT), [1]RESEARCH & INNOVATION BROKERAGE DEPARTMENT

COLEAD

- COmmittee Linking Entrepreneurship Agriculture Development
- **Mission:** facilitate and implement all actions that allow, directly and/or indirectly, to increase the contribution of the horticultural sector to the achievement of the Sustainable Development Goals (SDGs).
- **Research and innovation brokerage activities:** ensure that solutions are available to producers in ACP countries for critical and new production problems.
- **How?** Fast-track research and registration of alternative solutions by establishing partnerships with plant protection products manufacturers.

FRUIT FLIES AND FALSE CODLING MOTH CHALLENGES ON MANGO PRODUCTION

TRANS BORDER/REGIONAL PESTS

- FRUIT FLIES
  - *Bactrocera dorsalis* is problematic mostly in East Africa (Kenya, Uganda, Tanzania, Ethiopia, Sudan)
  - *Bactrocera invadens* and *Ceratitis capitata* in West Africa (Senegal, Mali, Ivory coast, Burkina Faso, Cameroon, Ghana, Guinea, Gambia)
- FALSE CODLING MOTH
  - Most problematic in East Africa (Kenya, Uganda, Tanzania, Ethiopia), and Southern Africa (South Africa, Mozambique, Namibia, Zimbabwe)

YIELD LOSSES

- FRUIT FLIES
  - Up to 60% in East Africa, 50% in West Africa and 40% in South Africa
- FALSE CODLING MOTH
  - Up to 50% in South Africa and 30% in East Africa. Less documented for West Africa

HINDRANCE TO MARKET ACCESS

- Both pests are classified as quarantine pest in EU
- FRUIT FLIES
  - **333 EU interceptions between 2020-2024:** Senegal - 72, Ivory coast - 70, Mali - 49, Burkina Faso - 48, Ghana - 12, Guinea - 6, Gambia - 3, Uganda - 8 and Sudan - 1
  - Kenya imposed a self ban for mango export to EU markets in 2013 due to high numbers of interceptions
- CONTROL OPTIONS:
  - Limited or non-existent, with available options mostly being synthetic plant protection products.

Female fruit fly laying eggs on a mango fruit

FCM larvae on a mango fruit

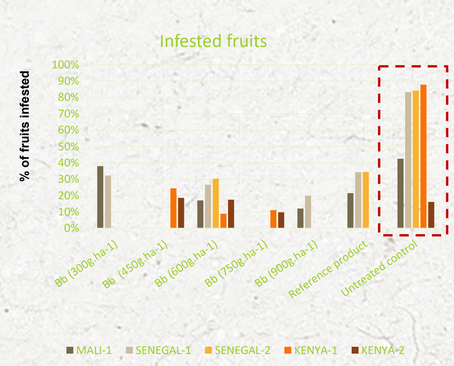
BEAUVERIA BASSIANA EFFICACY TRIALS

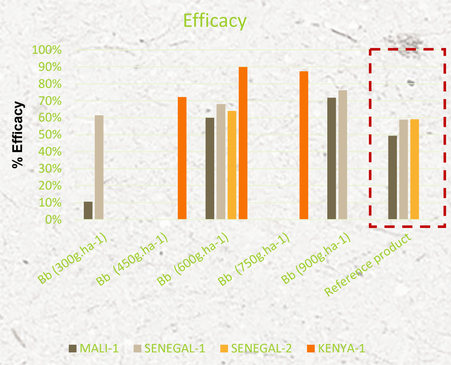
Site location: Senegal, Mali and Kenya **Growing seasons:** 2021, 2023 **Mango varieties:** Kent, Keitt, Apple

Experimental design : Randomized Complete Block Design (RCBD) **compliant with requirements set by competent authorities for efficacy trials needed for registration**

EFFICACY OF *B. BASSIANA* ON MANGO FRUIT FLIES

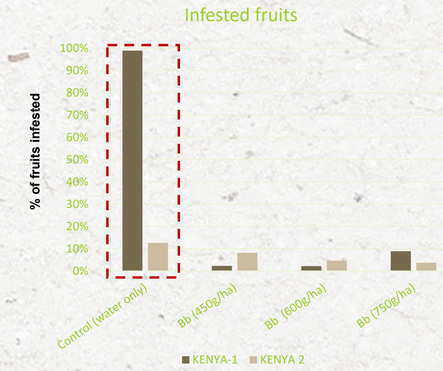
60-90% infestation reduction which translated to up to 90% efficacy of the product

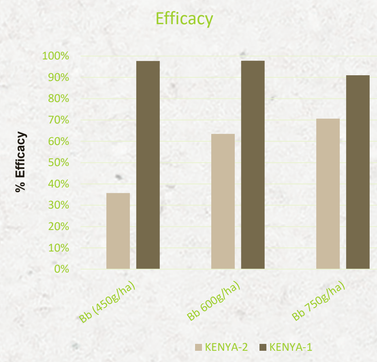




EFFICACY OF *B. BASSIANA* ON FALSE CODLING MOTH

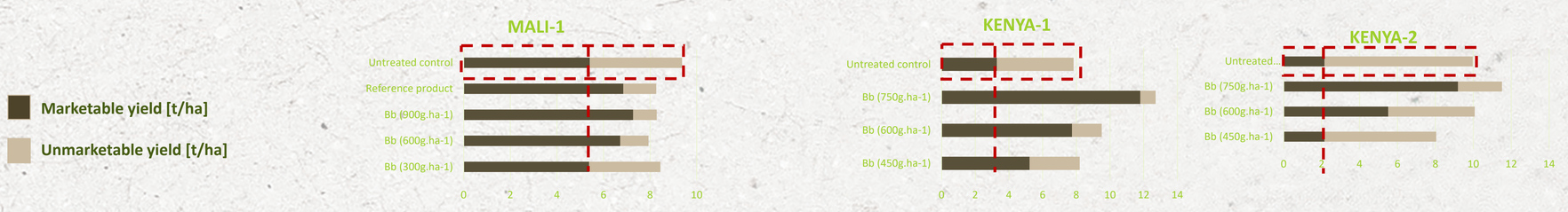
63-97% infestation reduction which translated to up to 98% efficacy of the product





EFFECT OF *B. BASSIANA* ON MANGO YIELD

Overall yield (except for Mali) increased by 31% and marketable yield by 135%



RESULTS & CONCLUSION

- *B. bassiana* applied at 600 g/ha effectively controls fruit flies and false codling moth on mango across the three countries and varieties, resulting in higher total and marketable yields.
- The product can be included in an IPM strategy to reduce reliance on synthetic pesticides and mitigate pesticide residue risks.
- Trial data has incentivized the manufacturer to pursue product registration in 11 countries in West and East Africa.
- COLEAD supported biocontrol alternatives by conducting 47 screening trials and 33 registration trials in partnership with manufacturers since 2004.
- Since 2019, COLEAD has facilitated the submission of 8 biocontrol registration dossiers and secured registration for 4 PPPs in over 10 African countries.

CONTACT US!

IF YOU WOULD LIKE TO FIND OUT MORE ABOUT OUR ACTIVITIES AND OPPORTUNITIES FOR COLLABORATION

NETWORK@COLEAD.LINK

WWW.COLEAD.LINK

Funded by the European Union